

Figure 1A

1 CCCACGCGTCCGGGGAGCTTGCACTAACATCTACAATGGCTTCTAAAAAGCACAGATGAC 60
 61 CTGCTACACTTCCTGACTTGCTTGCTATTGGTTGGCACTGTTCATAAATATAATTTGCTC 120
 121 TTCACTTTTCTTTGAAATGAGCAACCTGAATTACTCGGAGGAGAAAGGCAGGAGAGATA 180
 181 GAGGCAGCAGAAGCCAGGGCAGCTGAAAGACAGAGACCTTCAGTCTGAACCAACAACAAG 240
 241 CAAAGTTAAATTATGGATATCCAAGGGAGTCTATAGAAGGTCCATGCAAGACATTTTGAC 300
 301 TACTTGTCTGAACTAGATATCCCTTGAATGTGCACACAAAAAGTGAATGGGTCAATTTGAT 360
 361 AAGGGAAAACTAGGTTCCAAGATGGCTGAATAGGAAGAGCTCCAGTCTGCAGATCCCAGT 420
 421 GTGAGCAACGTGGAAGATGGGTGATTTCTGCATTTCCAAGTGCAGATGGAGAGAAAAATT 480
 481 TATGTCCTTGCAACCATCCATCTCCGTATCAGAAATGGAACCAAATGGCACCTTCAGCAA 540
 1 M E P N G T F S N 9
 541 TAACAACAGCAGGAAGTGCACAATTGAAAACTTCAAGAGAGAATTTTTCCCAATTGTATA 600
 10 N N S R N C T I E N F K R E F F P I V Y 29
 601 TCTGATAATATTTTTCTGGGGAGTCTTGGGAAATGGGTTGTCCATATATGTTTTCTGCA 660
 30 L I I F F W G V L G N G L S I Y V F L Q 49
 661 GCCTTATAAGAAGTCCACATCTGTGAACGTTTTTCATGCTAAATCTGGCCATTTTCAGATCT 720
 50 P Y K K S T S V N V F M L N L A I S D L 69
 721 CCTGTTTATAAGCACGCTTCCCTTCAGGGCTGACTATTATCTTAGAGGCTCCAATTGGAT 780
 70 L F I S T L P F R A D Y Y L R G S N W I 89
 781 ATTTGGAGACCTGGCCTGCAGGATTATGTCTTATTCCTTGTATGTCAACATGTACAGCAG 840
 90 F G D L A C R I M S Y S L Y V N M Y S S 109
 841 TATTTATTTCTGACCGTGTGAGTGTGTGCGTTTCTGGCAATGGTTACCCCTTTTCG 900
 110 I Y F L T V L S V V R F L A M V H P F R 129

Figure 1B

901 GCTTCTGCATGTCACCAGCATCAGGAGTGCCTGGATCCTCTGTGGGATCATATGGATCCT 960
 130 L L H V T S I R S A W I L C G I I W I L 149

 961 TATCATGGCTTCCTCAATAATGCTCCTGGACAGTGGCTCTGAGCAGAACGGCAGTGTCAC 1020
 150 I M A S S I M L L D S G S E Q N G S V T 169

 1021 ATCATGCTTAGAGCTGAATCTCTATAAAATTGCTAAGCTGCAGACCATGAACTATATTGC 1080
 170 S C L E L N L Y K I A K L Q T M N Y I A 189

 1081 CTTGGTGGTGGGCTGCCTGCTGCCATTTTTCACACTCAGCATCTGTTATCTGCTGATCAT 1140
 190 L V V G C L L P F F T L S I C Y L L I I 209

 1141 TCGGGTTCTGTTAAAAGTGGAGGTCCCAGAATCGGGGCTGCGGGTTTCTCACAGGAAGGC 1200
 210 R V L L K V E V P E S G L R V S H R K A 229

 1201 ACTGACCACCATCATCATCACCTTGATCATCTTCTTCTGTGTTTCCTGCCCTATCACAC 1260
 230 L T T I I I T L I I F F L C F L P Y H T 249

 1261 ACTGAGGACCGTCCACTTGACGACATGGAAAGTGGGTTTATGCAAAGACAGACTGCATAA 1320
 250 L R T V H L T T W K V G L C K D R L H K 269

 1321 AGCTTTGGTTATCACACTGGCCTTGGCAGCAGCCAATGCCTGCTTCAATCCTCTGCTCTA 1380
 270 A L V I T L A L A A A N A C F N P L L Y 289

 1381 TTACTTTGCTGGGAGAATTTTAAGGACAGACTAAAGTCTGCACTCAGAAAAGGCCATCC 1440
 290 Y F A G E N F K D R L K S A L R K G H P 309

 1441 ACAGAAGGCAAAGACAAAGTGTGTTTTCCCTGTTAGTGTGTGGTTGAGAAAGGAAACAAG 1500
 310 Q K A K T K C V F P V S V W L R K E T R 329

 1501 AGTATAAGGAGCTCTTAGATGAGACCTGTTCTGTATCCTTGTGTCCATCTTCATTCACT 1560
 330 V * 331

 1561 CATAGTCTCCAAATGACTTTGTATTTACATCACTCCCAACAAATGTTGATTCTTAATATT 1620

 1621 TAGTTGACCATTACTTTTGTTAATAAGACCTACTTCAAAAATTTTATTTCAGTGTAACAAA 1680

 1681 AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 1708

Figur 2A

		1		50
HGPRBMY11	(1)	-----MSLQPSISVSEMEPNC-----	TFSNNNSRNCTTEN--FK	
HGPRBMY11v1	(1)	MERKFMSLQPSISVSEMEPNC-----	TFSNNNSRNCTTEN--FK	
P2Y5_CHICK	(1)	-----MVSNCSTEDS--FK		
P2YR_CHICK	(1)	MTEALISAALNGTQPELLAGG-----	WAAGNATTKCSLTKTGFQ	
P2YR_MELGA	(1)	MTEALISAALNGTQPELLAGG-----	WAAGNASTKCSLTKTGFQ	
P2YR_RAT	(1)	MTEVPWSAVPNGTDAAFLAGLSLWGNSTIAS	AAVSSSFRCALIKTGFQ	
Q9Y271	(1)	-----MDETG-----	NLTVSSATCHDTIDDFR	
GPRH_HUMAN	(1)	-----MNGLEVAPPG-----	LTINFSLATAEQCGQETPEE	
		51		100
HGPRBMY11	(22)	REFFPIVYLTIFFWCVLGNGLSIYVFEQPYKSTSVNVEMENLAISDLLF		
HGPRBMY11v1	(38)	REFFPIVYLTIFFWCVLGNGLSIYVFEQPYKSTSVNVEMENLAISDLLF		
P2Y5_CHICK	(14)	YTLYGCVFSMVFLGLIANCVAIYIFITLKVNRNETTITMNLAIISDLLF		
P2YR_CHICK	(40)	FYMLPTVYLVLVFIIGFLGNSVAIWMFVHMRPWSGISVYMENLALADELY		
P2YR_MELGA	(40)	FYMLPTVYLVLVFIIGFLGNSVAIWMFVHMRPWSGISVYMENLALADELY		
P2YR_RAT	(51)	FYMLPAVYLVLVFIIGFLGNSVAIWMFVHMRPWSGISVYMENLALADELY		
Q9Y271	(23)	NQVYSTLYSMISMVGFEGNGFVLVLTKTTHKKS	AFQVYMINLAVADLLC	
GPRH_HUMAN	(31)	NMLEASFYLLDFILALVGNLILALWLFRDHKSGTPANVEMHHLAVADLSC		
		101		150
HGPRBMY11	(72)	ISTLPPFRADYYLRGSNWIFGDLACRTMSYSLYVNMYSIIYFLTIVLSVVR		
HGPRBMY11v1	(88)	ISTLPPFRADYYLRGSNWIFGDLACRTMSYSLYVNMYSIIYFLTIVLSVVR		
P2Y5_CHICK	(64)	VFTLPPFRIRYEFVVRN-WPFGDVLCKISVTLEFYINMYGSILFLTICISVDR		
P2YR_CHICK	(90)	VLTLPALIEYYENKTDWIFGDVMCKLQRFIEHVNLYGSILFLTICISVHR		
P2YR_MELGA	(90)	VLTLPALIEYYENKTDWIFGDVMCKLQRFIEHVNLYGSILFLTICISVHR		
P2YR_RAT	(101)	VLTLPALIEYYENKTDWIFGDVMCKLQRFIEHVNLYGSILFLTICISAHRY		
Q9Y271	(73)	VCTLPPLRVVYVHKGIMLFGDFLQRLSTYALYVNLVCSIFEMTAMSFRC		
GPRH_HUMAN	(81)	VLVLPTRLEVYHFSGNHWPFGELACRLTGELFYLNMYASIIYFLTICISADRF		
		151		200
HGPRBMY11	(122)	LAMVHPERLHHVTSIRSAWILCGTIWILIMASSIMLDS---GSEONGSV		
HGPRBMY11v1	(138)	LAMVHPERLHHVTSIRSAWILCGTIWILIMASSIMLDS---GSEONGSV		
P2Y5_CHICK	(113)	LAIVHPERSKTLRTKRNRARIVCAVWITVLAGSTPASEFQSTNRQNNTEQ		
P2YR_CHICK	(140)	TGVVHPLKSLGRKKKNAVYVSSIVVALVAVIAPILEYSGTGVRNRKTI		
P2YR_MELGA	(140)	TGVVHPLKSLGRKKKNAVYVSSIVVALVAVIAPILEYSGTGVRNRKTI		
P2YR_RAT	(151)	SGVVYPLKSLGRKKKNAIYVSVLWLLIVVVAISPILEYSGTGIRKNKTV		
Q9Y271	(123)	IAIVFPVQNIINLVTKKARFVCVGIWIEVILTSSEPLMAKPQKDEKNNIK		
GPRH_HUMAN	(131)	LAIVHPVKSLKLRRLPLYAHLACAFLLVVVAVAMAPLIVSPQTVQTNHTV		
		201		250
HGPRBMY11	(169)	TSCLE--LNLYKIAKIQTMNYIALVVGCLIPFETLSICYLLIIRVLLKVE		
HGPRBMY11v1	(185)	TSCLE--LNLYKIAKIQTMNYIALVVGCLIPFETLSICYLLIIRVLLKVE		
P2Y5_CHICK	(163)	RTCFENFPSTWKTYLSRIVIEIEIVGFFIPLINNVICSTMVLRITLNKPL		
P2YR_CHICK	(190)	TCYDT--TADEYLRSYFVYSMCTTVFMFCIPFIVILGCYGLIVKALITYKD		
P2YR_MELGA	(190)	TCYDT--TADEYLRSYFVYSMCTTVFMFCIPFIVILGCYGLIVKALITYKD		
P2YR_RAT	(201)	TCYDS--TSDEYLRSYFTYSMCTTVAMECIPVLILGCYGLIVRALITYKD		
Q9Y271	(173)	CFEPP--QDNQTKNHVLYLHYVSLFVGFIIPFVILIVCYTMIILTLKKS		
GPRH_HUMAN	(181)	CLQLY-----REKASHHALVSLAVAFTEPFITVTCYLLIIRSLRQGL		

Figure 2B

		251		300
HGPRBMY11	(217)	VPESGLRVSHRKALTTIIITIIFFLCFLPYHTLRTVHL-----TTWKV		
HGPRBMY11v1	(233)	VPESGLRVSHRKALTTIIITIIFFLCFLPYHTLRTVHL-----TTWKV		
P2Y5_CHICK	(213)	TLSRNKLS-KKKVLKMFVHIVIFCFQFVPYNITLILYSLMR--TOTWIN		
P2YR_CHICK	(238)	LDNSPLR---RKSIYLVIIIVLTVEAVSYLPFHVMKTLNLRARLDFOTPO		
P2YR_MELGA	(238)	LDNSPLR---RKSIYLVIIIVLTVEAVSYLPFHVMKTLNLRARLDFOTPO		
P2YR_RAT	(249)	LDNSPLR---RKSIYLVIIIVLTVEAVSYLPFHVMKTMNLRARLDFOTPE		
Q9Y271	(221)	MKKNLSS--HKKAIGMITVVTAAFLVSFMPYHIQRTIHLHFLHN--ETKP		
GPRH_HUMAN	(224)	RVEKRLK---TKAVRMIAIVLAIFLVCFVPHYVNRSVVVLHYR--SHGAS		
		301		350
HGPRBMY11	(261)	GLCKDRHKALVITLALAAANACFNPLLYYFAGENFKDRLKSALRKGHPO		
HGPRBMY11v1	(277)	GLCKDRHKALVITLALAAANACFNPLLYYFAGENFKDRLKSALRKGHPO		
P2Y5_CHICK	(260)	CSVVTAVRTMYPVTLCAVSNCCFDPIVYYFTSDTNSELDK--KQQ--VH		
P2YR_CHICK	(285)	CAFNDKVVATYQVTRGLASLNSCVDPILYFLAGDTFRRRLSRATRKSSRR		
P2YR_MELGA	(285)	CAFNDKVVATYQVTRGLASLNSCVDPILYFLAGDTFRRRLSRATRKSSRR		
P2YR_RAT	(296)	CAFNDRVVATYQVTRGLASLNSCVDPILYFLAGDTFRRRLSRATRKASRR		
Q9Y271	(267)	CDSVLRMOKSVVITLSLAASNCCEDPLLYFFSCGNFRKRLS-TFRKHSLS		
GPRH_HUMAN	(269)	CATORITLANRITSCITSLNGALDPIMYFFVAEKFRHALCNLLCGKRLK		
		351		379
HGPRBMY11	(311)	KAK-TKCVFPVSVWLRKETRV-----		
HGPRBMY11v1	(327)	KAK-TKCVFPVSVWLRKETRV-----		
P2Y5_CHICK	(306)	QNT-----		
P2YR_CHICK	(335)	SEP-NVQSKSEEMTNILTEYKQNGDTSL		
P2YR_MELGA	(335)	SEP-NVQSKSEEMTNILTEYKQNGDTSL		
P2YR_RAT	(346)	SEA-NLQSKSEEMTNILSEFKQNGDTSL		
Q9Y271	(316)	SVT-YVPRKASLPEKGEEICKV-----		
GPRH_HUMAN	(319)	GPPPSFEGKTNESSLSAKSEL-----		

Figure 3

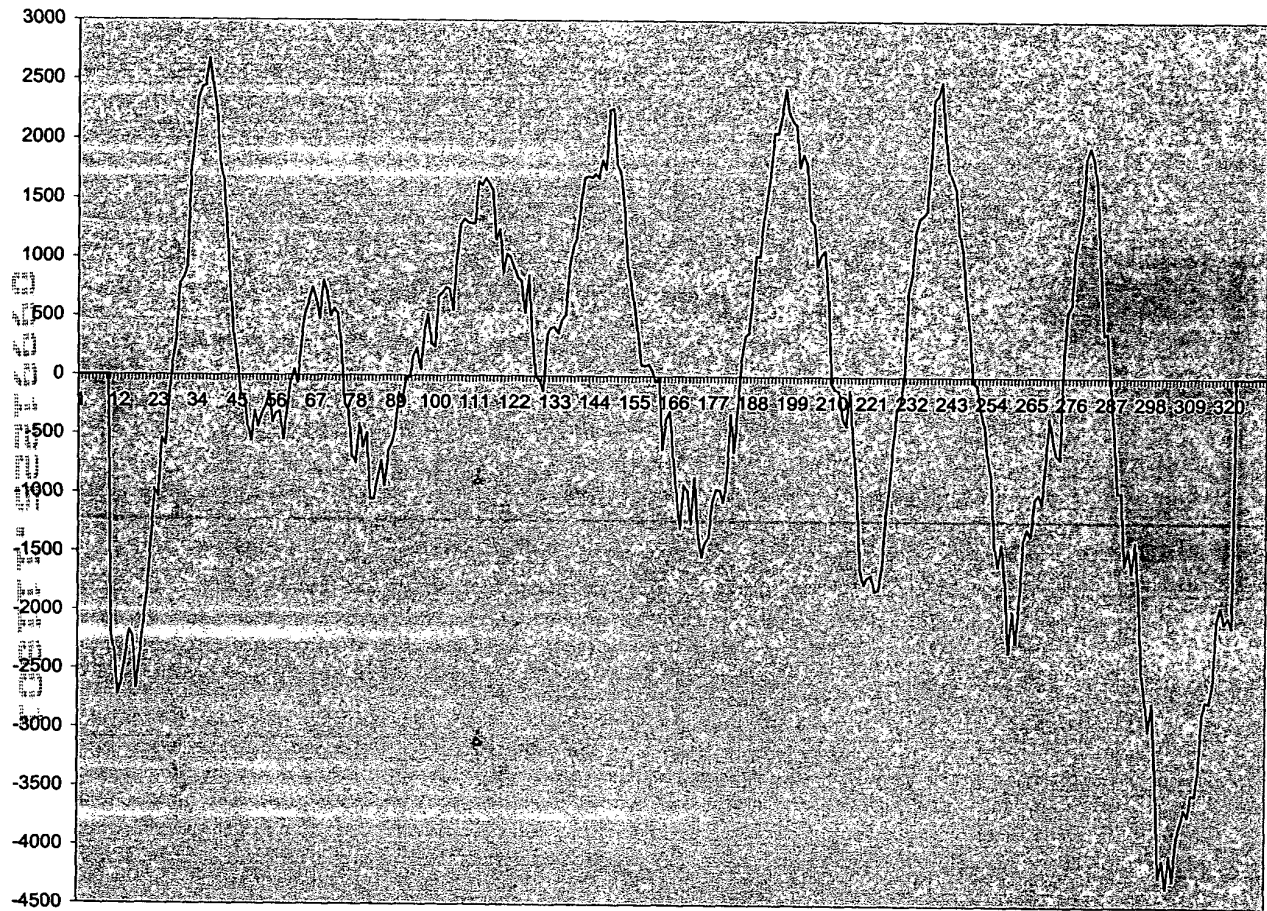


Figure 4.

Expression Profiling of Novel Human GPCR, HGPRBMY11

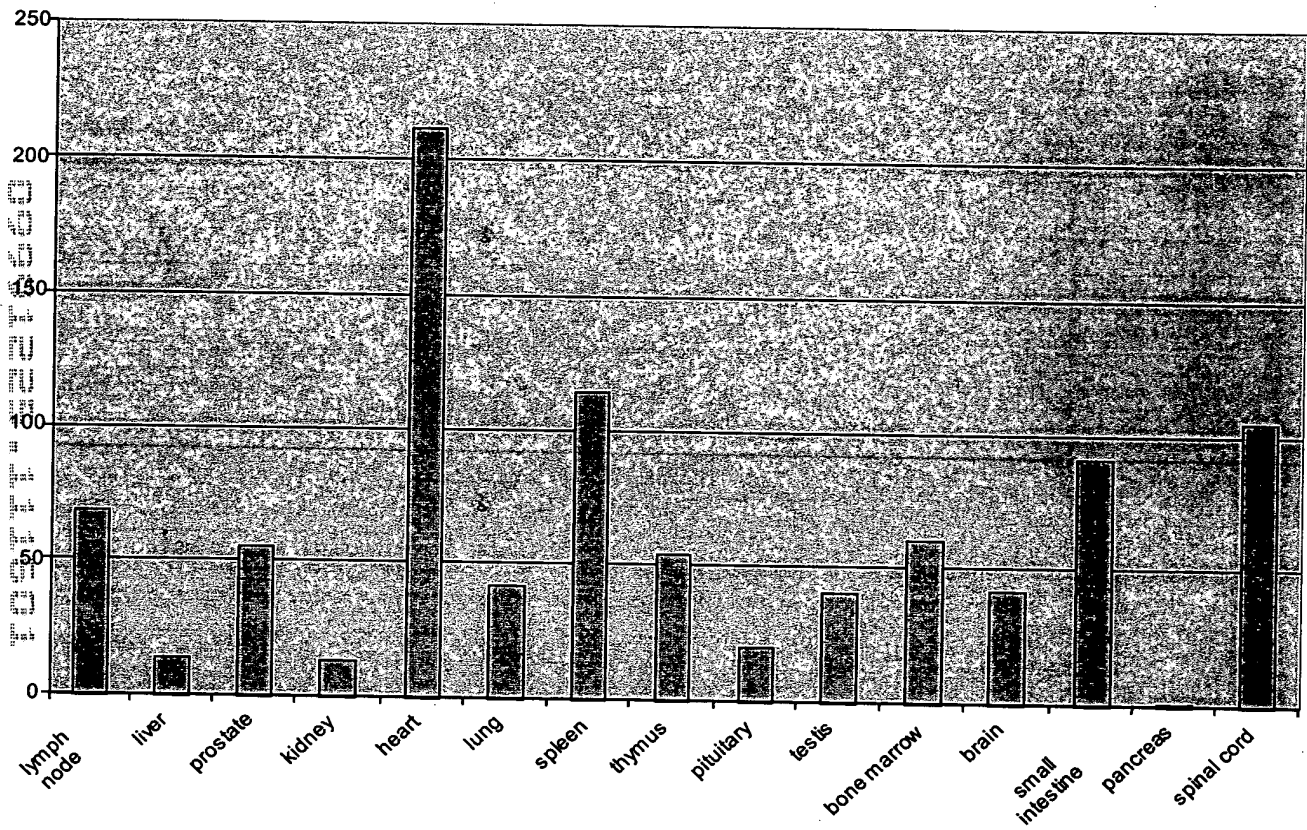


Figure 5.

HGPRBMY11

Protein	Genbank ID	Identities	Similarities
human cysteinyl leukotriene receptor	gi 11422069	37%	49%
chick purinergic receptor 5	gi P32250	36%	46%
human G-protein-coupled receptor GPR17	gi Q13304	36%	46%
chick purinergic receptor	gi P34996	30%	45%
turkey purinergic receptor	gi P49652	30%	45%
rat purinergic receptor	gi P49651	30%	44%

HGPRBMY11v1

Protein	Genbank ID	Identities	Similarities
human cysteinyl leukotriene receptor	gi 11422069	37.2%	49%
chick purinergic receptor 5	gi P32250	36.7%	46.1%
human G-protein-coupled receptor GPR17	gi Q13304	36.2%	46.1%
chick purinergic receptor	gi P34996	29.5%	43.9%
turkey purinergic receptor	gi P49652	29.8%	44.2%
rat purinergic receptor	gi P49651	29.6%	44%

Figure 6A

1 ATGGAGAGAAAAATTTATGTCCTTGCAACCATCCATCTCCGTATCAGAAATGGAACCAAAT 60
 1 M E R K F M S L Q P S I S V S E M E P N 20

 61 GGCACCTTCAGCAATAACAACAGCAGGAAGTGCACAATTGAAAACCTCAAGAGAGAATTT 120
 21 G T F S N N N S R N C T I E N F K R E F 40

 121 TTCCCAATTGTATATCTGATAATATTTTCTGGGGAGTCTTGGGAAATGGGTTGTCCATA 180
 41 F P I V Y L I I F F W G V L G N G L S I 60

 181 TATGTTTTCTGCAGCCTTATAAGAAGTCCACATCTGTGAACGTTTTTCATGCTAAATCTG 240
 61 Y V F L Q P Y K K S T S V N V F M L N L 80

 241 GCCATTTTCAGATCTCCTGTTTATAAGCACGCTTCCCTTCAGGGCTGACTATTATCTTAGA 300
 81 A I S D L L F I S T L P F R A D Y Y L R 100

 301 GGCTCCAATTGGATATTTGGAGACCTGGCCTGCAGGATTATGTCTTATTCCTTGTATGTC 360
 101 G S N W I F G D L A C R I M S Y S L Y V 120

 361 AACATGTACAGCAGTATTTATTTCTGACCGTGCTGAGTGTGTGCGTTTTCTGGCAATG 420
 121 N M Y S S I Y F L T V L S V V R F L A M 140

 421 GTTCAACCCCTTTCGGCTTCTGCATGTCACCAGCATCAGGAGTGCTGGATCCTCTGTGGG 480
 141 V H P F R L L H V T S I R S A W I L C G 160

 481 ATCATATGGATCCTTATCATGGCTTCTCAATAATGCTCCTGGACAGTGGCTCTGAGCAG 540
 161 I I W I L I M A S S I M L L D S G S E Q 180

 541 AACGGCAGTGTACATCATGCTTAGAGCTGAATCTCTATAAAATTGCTAAGCTGCAGACC 600
 181 N G S V T S C L E L N L Y K I A K L Q T 200

 601 ATGAACTATATTGCCTTGGTGGTGGGCTGCCTGCTGCCATTTTTCACACTCAGCATCTGT 660
 201 M N Y I A L V V G C L L P F F T L S I C 220

 661 TATCTGCTGATCATTCGGGTCTGTGTTAAAGTGGAGGTCCCAGAATCGGGGCTGCGGGTT 720
 221 Y L L I I R V L L K V E V P E S G L R V 240

 721 TCTCACAGGAAGGCACTGACCACCATCATCATCACCTTGATCATCTTCTTCTGTGTTTC 780
 241 S H R K A L T T I I I T L I I F F L C F 260

 781 CTGCCCTATCACACACTGAGGACCGTCCACTTGACGACATGGAAAGTGGGTTTATGCAAA 840
 261 L P Y H T L R T V H L T T W K V G L C K 280

 841 GACAGACTGCATAAAGCTTTGGTTATCACACTGGCCTTGGCAGCAGCCAATGCCTGCTTC 900
 281 D R L H K A L V I T L A L A A A N A C F 300

1

[illegible]

Figure 7

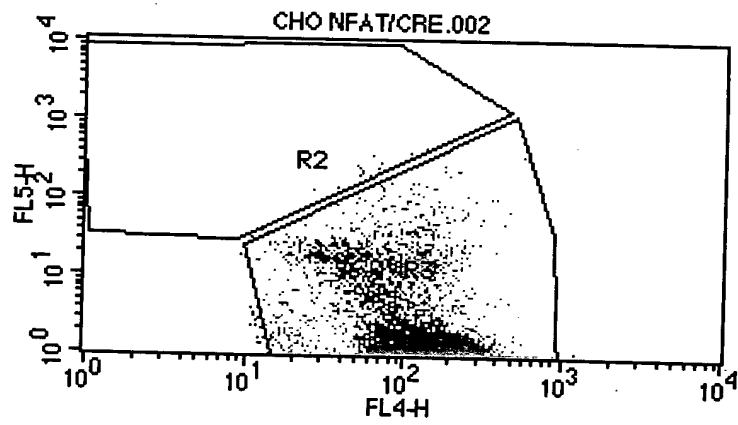


Figure 8

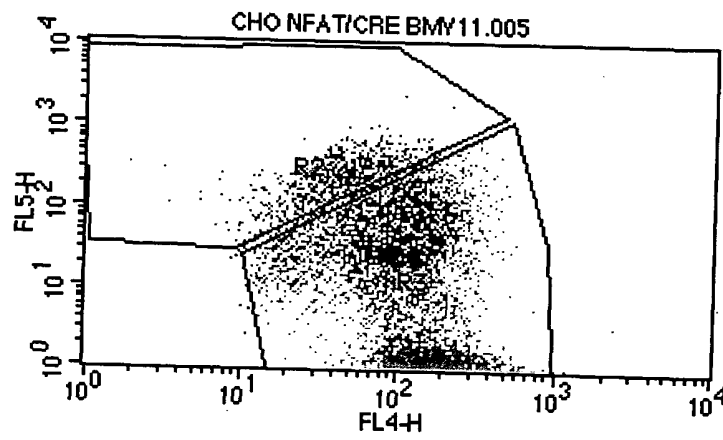


Figure 9

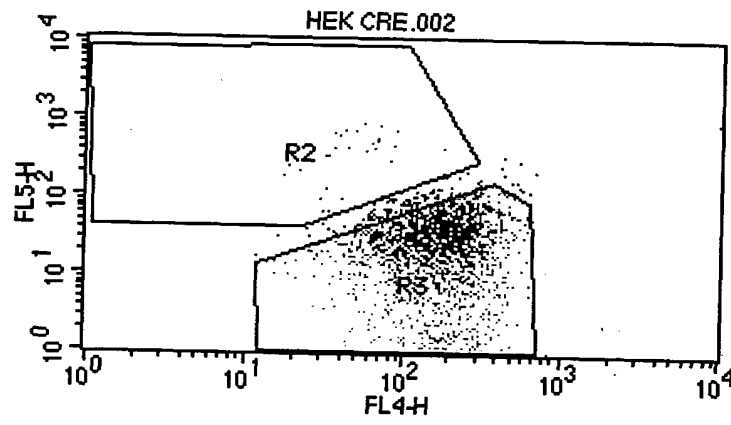


Figure 10

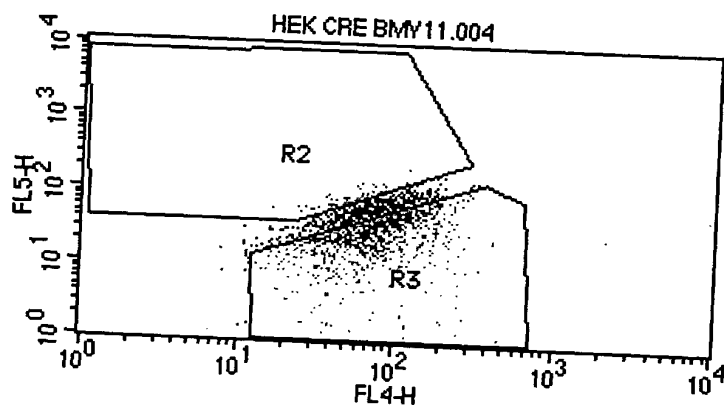


Figure 11

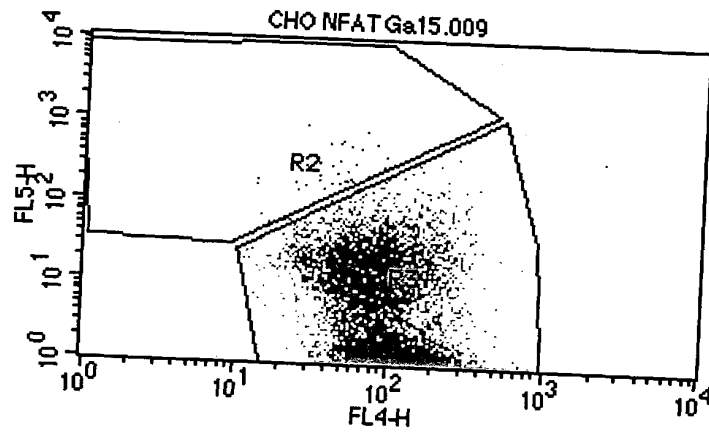


Figure 12

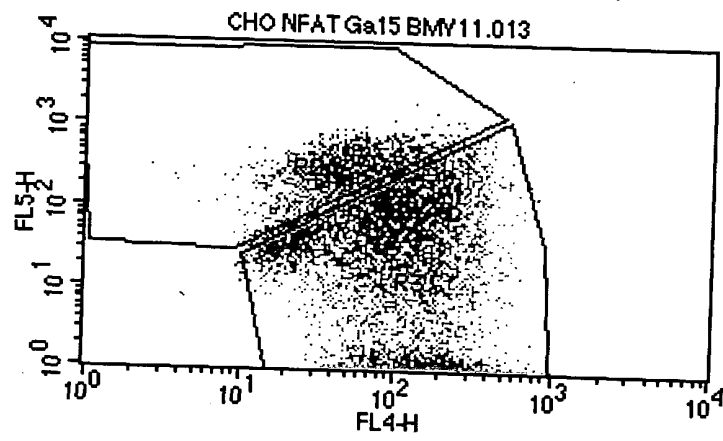
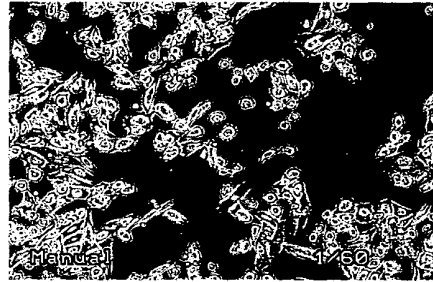
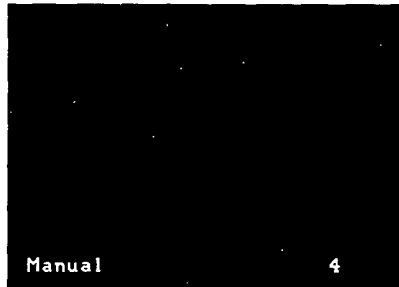


Figure 13

Cho NFAT Gal5 Control (Fluorescent vs. Bright Field)



Cho NFAT Gal5 BMY11 (Fluorescent vs. Bright Field)

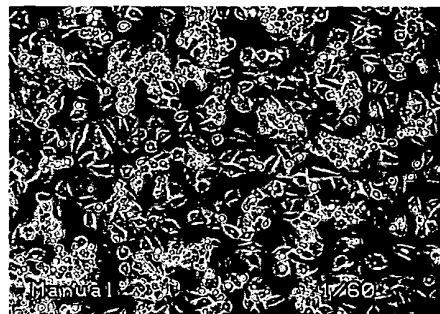
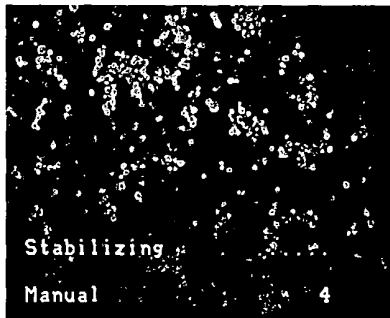
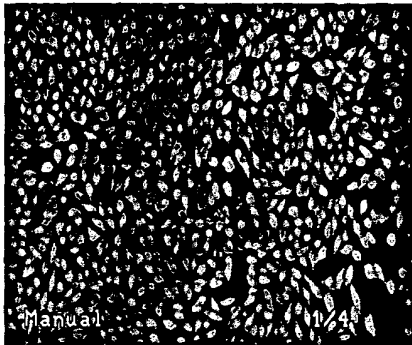
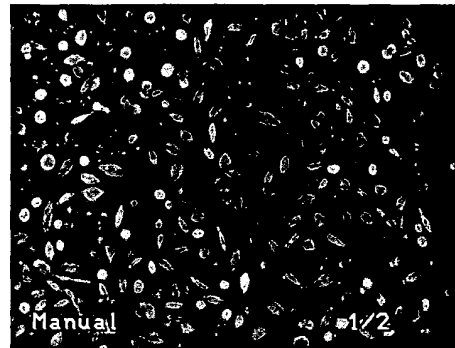


Figure 14

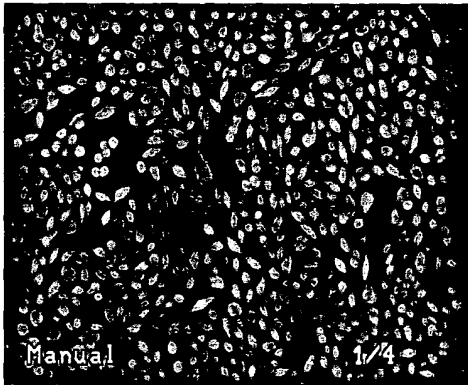
a. Cho-NFAT CRE



b. Cho-NFAT CRE + F/T/P



c. Cho-NFAT CRE oGPCR-Intermediate



d. Cho-NFAT CRE oGPCR High

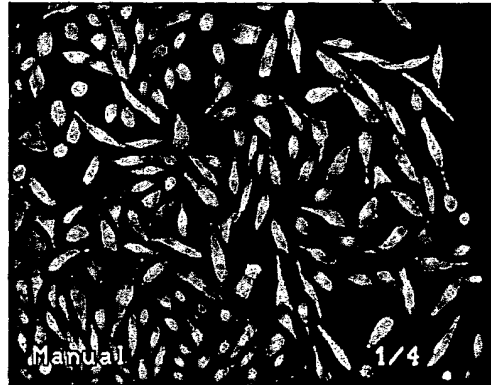


Figure 15A

1 ATGTCCTTGCAACCATCCATCTCCGTATCAGAAATGGAACCAAATGGCACCTTCAGCAAT 60
 1 M S L Q P S I S V S E M E P N G T F S N 20

 61 AACAAACAGCAGGAACTGCACAATTGAAAACCTCAAGAGAGAATTTTTCCCAATTGTATAT 120
 21 N N S R N C T I E N F K R E F F P I V Y 40

 121 CTGATAATATTTTTCTGGGGAGTCTTGGGAAATGGGTTGTCCATATATGTTTTCTGCAG 180
 41 L I I F F W G V L G N G L S I Y V F L Q 60

 181 CCTTATAAGAAGTCCACATCTGTGAACGTTTTTCATGCTAAATCTGGCCATTTTCAGATCTC 240
 61 P Y K K S T S V N V F M L N L A I S D L 80

 241 CTGTTTCATAAGCACGCTTCCCTTCAGGGCTGACTATTATCTTAGAGGCTCCAATTGGATA 300
 81 L F I S T L P F R A D Y Y L R G S N W I 100

 301 TTTGGAGACCTGGCCTGCAGGATTATGTCTTATTCCTTGTATGTCAACATGTACAGCAGT 360
 101 F G D L A C R I M S Y S L Y V N M Y S S 120

 361 ATTTATTTCTGACCGTGCTGAGTGTGTGCGTTTCCTGGCAATGGTTCACCCCTTTTCGG 420
 121 I Y F L T V L S V V R F L A M V H P F R 140

 421 CTTCTGCATGTCACCAGCATCAGGAGTGCCTGGATCCTCTGTGGGATCATATGGATCCTT 480
 141 L L H V T S I R S A W I L C G I I W I L 160

 481 ATCATGGCTTCCTCAATAATGCTCCTGGACAGTGGCTCTGAGCAGAACGGCAGTGTCA 540
 161 I M A S S I M L L D S G S E Q N G S V T 180

 541 TCATGCTTAGAGCTGAATCTCTATAAAATGCTAAGCTGCAGACCATGAACTATATTGCC 600
 181 S C L E L N L Y K I A K L Q T M N Y I A 200

 601 TTGGTGGTGGGCTGCCTGCTGCCATTTTTACACTCAGCATCTGTTATCTGCTGATCATT 660
 201 L V V G C L L P F F T L S I C Y L L I I 220

 661 CGGGTTCTGTAAAAGTGGAGGTCCCAGAATCGGGGCTGCGGGTTTCTCACAGGAAGGCA 720
 221 R V L L K V E V P E S G L R V S H R K A 240

 721 CTGACCACCATCATCATCACCTTGATCATCTTCTTCTTGTTTCTGCTGCTGATCATT 780
 241 L T T I I I T L I I F F L C F L P Y H T 260

 781 CTGAGGACCGTCCACTTGACGACATGGAAAGTGGGTTTATGCAAAGACAGACTGCATAAA 840
 261 L R T V H L T T W K V G L C K D R L H K 280

 841 GCTTTGGTTATCACACTGGCCTTGGCAGCAGCCAATGCCTGCTTCAATCCTCTGCTCTAT 900
 281 A L V I T L A L A A A N A C F N P L L Y 300

Figure 15B

901 TACTTTGCTGGGGAGAATTTTAAGGACAGACTAAAGTCTGCACTCAGAAAAGGCCATCCA 960
301 Y F A G E N F K D R L K S A L R K G H P 320
961 CAGAAGGCAAAGACAAAGTGTGTTTTCCCTGTTAGTGTGTGGTTGAGAAAGGAAACAAGA 1020
321 Q K A K T K C V F P V S V W L R K E T R 340
1021 GTATAA 1026
341 V 341

1021 GTATAA 1026
341 V 341